

WHAT IS CLAIMED IS:

1. A nitride semiconductor light emitting device comprising at least a substrate, an active layer formed of a nitride semiconductor containing mainly In and Ga, a p-electrode, and an n-electrode, wherein at least one of said p-electrode and said n-electrode is electrically separated into at least two regions.

2. The nitride semiconductor light emitting device according to claim 1, wherein at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and said nitride semiconductor light emitting device has self pulsation characteristics.

3. The nitride semiconductor light emitting device according to claim 1, wherein said active layer has a bandgap of at least 2.6 eV, and at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and said nitride semiconductor light emitting device has self pulsation characteristics.

4. The nitride semiconductor light emitting device according to claim 1, wherein said active layer has a bandgap of at least 2.6 eV, and at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and said nitride semiconductor light emitting device has self pulsation characteristics in a light output range of at least 5 mW.

5. The nitride semiconductor light emitting device according to claim 1, wherein at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and the p-electrode and n-electrode are electrically short-circuited in at least one of the regions of said separated electrode.

6. The nitride semiconductor light emitting device according to

claim 1, wherein at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and the p-electrode and n-electrode are electrically short-circuited in at least one of the regions of said separated electrode, and said nitride semiconductor light emitting device has self pulsation characteristics.

7. The nitride semiconductor light emitting device according to claim 1, wherein said active layer has a bandgap of at least 2.6 eV, and at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and the p-electrode and n-electrode are electrically short-circuited in at least one of the regions of said separated electrode, and said nitride semiconductor light emitting device has self pulsation characteristics.

8. The nitride semiconductor light emitting device according to claim 1, wherein said active layer has a bandgap of at least 2.6 eV, and at least one of said p-electrode and said n-electrode is separated electrically into at least two regions, and the p-electrode and n-electrode are electrically short-circuited in at least one of the regions of said separated electrode, and said nitride semiconductor light emitting device has self pulsation characteristics in a light output range of at least 5 mW.

9. The nitride semiconductor light emitting device according to claim 1, wherein one of said electrodes electrically separated into at least two regions forms contact with one of two mirror facets forming a cavity, and said mirror facet has a reflection film containing a conductive material, and the p-electrode and n-electrode are electrically connected by said reflection film.

10. The nitride semiconductor light emitting device according to claim 9, wherein one of said electrodes electrically separated into at least two regions forms contact with one of two mirror facets forming a cavity at a side opposite to an output plane.

11. The nitride semiconductor light emitting device according to claim 9, wherein said conductive material includes Al.

12. The nitride semiconductor light emitting device according to claim 1, wherein a resistor is provided between said p-electrode and said n-electrode in at least one of the regions of said electrode electrically separated into at least two regions.

13. The nitride semiconductor light emitting device according to claim 12, wherein self pulsation characteristics are adjusted by said resistor provided between said p-electrode and said n-electrode.

14. The nitride semiconductor light emitting device according to claim 1, wherein Si is added as n type impurities into said active layer, and a concentration of said Si is  $1 \times 10^{17}/\text{cm}^3$  to  $5 \times 10^{18}/\text{cm}^3$ .

15. The nitride semiconductor light emitting device according to claim 1, wherein Si is added as n type impurities, and an average concentration of said Si is  $1 \times 10^{17}/\text{cm}^3$  to  $5 \times 10^{18}/\text{cm}^3$  in a region from a p-n junction to said active layer.

5 16. The nitride semiconductor light emitting device according to claim 1, wherein at least one of said p-electrode and said n-electrode is electrically separated into at least two regions, and the p-electrode and n-electrode are electrically short-circuited in at least one of the regions of said separated electrode, and a range of  $0.02 \leq L1/L2 \leq 0.30$  is established, where L1 is a total length of the region where the p-electrode and n-electrode are electrically short-circuited, and L2 is a total length of the region not short-circuited, among the electrode separated into regions.

17. The nitride semiconductor light emitting device according to claim 1, wherein connection is established such that at least one of said electrodes separated into at least two regions has reverse bias applied to

5      said active layer and another of said electrodes separated into at least two regions has forward bias applied to the active layer.

18.    The nitride semiconductor light emitting device according to claim 17, wherein connection is established such that at least one of said electrodes separated into at least two regions has reverse bias and forward bias applied in a switched manner to said active layer.